Remarks

This Amendment is in response to the Official Action mailed November 28, 2003. The Examiner made the Action FINAL. The Examiner again rejected applicants' claims 1-19. Specifically, the Examiner rejected all claims under 35 USC §112. The Examiner states the claim amendments are not supported by the specification. The Examiner also maintains that claims 1, 2, 7-10, 13 and 14 are anticipated under 35 USC § 102(e). The Examiner cited Balachandran et al. (U.S. Patent No. 5,881,105) as the basis for this rejection. The Examiner also rejected applicants' claims 3-4 and 15-19 as obvious under 35 USC § 103(a). The Examiner cited Balachandran et al. in view of Le Strat et al. (U.S. Patent No. 6,134,220) as the basis for the rejection. The Examiner also rejected claims 5, 11 and 12 under 35 USC § 103, citing Balachandran et al in view of US Patent No. 5,199,031 to Dahlin.

In response to the Examiner's rejections, applicants submit amended claims 1 - 6, 9-12, 15 and 17.

In the rejection under 35 USC § 112, the Examiner states that the amended claims filed in response to the previous Office Action contain material not supported by the description. In particular, the Examiner objects to the phrase "partitioning said bit sequence of signalling information and inserting said partitioned bit sequence of signalling information into frames other than the said individual frames" in claims 1 and 3 and a corresponding phrase in claims 9 and 11. The Examiner states that there is no disclosure in the specification of this limitation.

The applicants draw the Examiner's attention once again to Fig. 2 of the specification as filed and to the description. The applicants submit that support for the amendments submitted for the Examiner's consideration in the previous response are readily apparent from this Figure.

In the discussion of Fig. 2 at page 6, second paragraph, the description states: "[f]or the first three frames 0 to 2 the actual coding mode is mode 3, characterised by bit sequence 010, for both the code words of downlink and uplink. As no change of coding mode is necessary for the next three frames 3 to 5 the sequence of the multi-frame signalling bits of the downlink also is 010, mode 3. . . . Within the consecutive three

frames 3 to 5 it is signalled that the frames 6 to 8 will have a different coding mode. To accomplish this the bit sequence of the multi-frame signalling bits is changed to 001 to represent mode 2. For the frames 6 to 8 mode 2 is used as coding mode".

This discussion can be further understood by considering the arrows shown in Fig. 2, indicating that the mode command denoting the coding mode to be used in frames 3 to 5 is transmitted one bit at a time in frames 0 to 2. (Note that the least significant bit is transmitted first (frame 0) and the most significant bit is transmitted last (frame 2)). Similarly, the mode command denoting the coding mode to be used in frames 6 to 8 (001) is transmitted one bit at a time in frames 3 to 5.

It would therefore be understood by a person skilled in the art of the transmission of signalling information that the limitations introduced into the claims are explicitly disclosed in the specification as filed.

The applicants note that at page 4, second paragraph of the Office Action, the Examiner refers to the specification at page 5, lines 24-27 as stating that the multi-frame signalling bits transmitted in three consecutive frames contain a quality measurement of the downlink. However, the Examiner's attention is drawn to the beginning of the paragraph, at page 5, lines 20-22, where it is made clear that an alternate situation is being described, in which the transmission direction is reversed. This situation is also shown in Fig. 2: in the fifth column the multi-frame signalling bit of the uplink used for characterising the transmission quality of the downlink is shown (see also page 6, lines 14-17).

In the first full paragraph of page 5 of the Office Action, the Examiner states that: "In Fig. 2, the partitioned bits in column 3 are not the same as the coding mode bits in column 2. For example, frame 0 has the mode 010 in column 2, but frames 3 to 5 have 100 in column 3; frame 3 has 010 in column 2, but frames 6 to 8 have 110 in column 3".

The applicants respectfully submit that the Examiner has misunderstood Fig. 2. As indicated by the arrows shown in Fig. 2, the mode command bits are transmitted in consecutive frames *prior to* the frames in which the transmitted mode command is used as an actual mode signalling code word. Thus, frame 3 has the mode represented by bit sequence 010 (column 2), which was transmitted as a partitioned bit sequence in frames 0 to 2 (column 3). Similarly, frame 6 has the mode represented by bit sequence 001

(column 2), which was transmitted as a partitioned bit sequence in frames 3 to 5. (The Examiner's attention is again drawn to the fact that the mode command transmitted in three consecutive frames is transmitted with the least significant bit first and the most significant bit last; thus, the mode command transmitted in frames 3 to 5 is 001 and not 100).

Consequently, the applicants believe that the Examiner's rejection under 35 USC § 112 is misplaced, and based upon an incorrect interpretation of Figure 2. However, in order to expedite the allowance of this case, and to make the correspondence between the claim language and Fig. 2 more readily understood, the claims have been further amended. Specifically the order of the steps recited in claim 1 has been changed. This change called for some minor rewording of each method step. In addition, it has been clarified that it is not the entire "partitioned bit sequence" that is inserted into the plurality of frames recited in newly amended claim 1, but rather *bits* of that partitioned bit sequence.

The amendments are therefore clarifying amendments and not made for the purpose of patentability. These amendments are introduced to clarify the claim language in light of the Examiner's objections. No new matter has been introduced.

With regard to the Examiner's rejections under 35 USC §§ 102(e) and 103, it is submitted that neither Balachandran nor Le Strat, nor a combination of the teachings of the two documents, suggests a transmission of signalling information in the way recited in the claims.

As noted by the Examiner in point 8.1 of the office action, Balachandran teaches the step of inserting signalling information related to individual frames into the individual frames (column 3, lines 45 to 47). Balachandran also describes interleaving control signals in the FACCH (column 4, lines 3 to 11). However, there is no suggestion in Balachandran that the same signalling information should be inserted both into the frames to which it relates and into other frames, as recited in the claims of the present application and as shown in figure 2. On the contrary, column 3, lines 45 to 47 describes the insertion of synchronising bits into a transmission burst and column 4, lines 3 to 11 describes the interleaving of control signals in the FACCH, and there is no suggestion that these control signals include the synchronising bits. Thus, the partitioning and

inserting step and the inserting step of claim 1 are only disclosed in Balachandran in respect of different signalling information. Moreover, there is no suggestion in Balachandran that the two steps should be carried out in respect of the same signalling information. It is therefore submitted that claim 1 and corresponding system claim 9 of the present application are novel and inventive over Balachandran.

The Examiner also rejects claim 3 as obvious over Balachandran in view of Le Strat. Claim 3 contains the further feature that the signalling information indicates a coding mode. Le Strat describes a coding mode sent through the FACCH. However, as in Balachandran, there is no suggestion in Le Strat that the coding mode, or indeed any signalling information, should be transmitted in two ways and, in particular, the two ways specified in claims 1 and 3.

Based upon the foregoing, it is submitted that independent claims 1, 3, 9 and 11 are patentable over Balanchandran or Balachandran in view of Le Strat. Neither Balanchandran et al. or Balachandran et al. in view of Le Strat disclose or suggest partitioning a bit sequence of signalling information that relates to an individual frame and inserting and evaluating this bit sequence of information into and from frames other than the individual frames. The remaining claims are patentable by virtue of their dependence on one of independent claims 1, 3, 9 and 11.

In closing, at page 23 of the Office Action the Examiner suggests that the applicant's argument made in response to the previous Office Action is conflicting in nature. The Examiner states that: "[o]n the one hand the applicants argue that the individual frame has the actual coding mode and the other frames have future coding modes; on the other hand they argue that the bit sequence in the individual frame and the other frames is the same". For clarity, the applicants reiterate their position that the bit sequence transmitted in an individual frame to which the bit sequence relates (e.g. a code word, shown in column 2 of Fig. 2) *is the same* as the bit sequence that is partitioned and transmitted in other frames (e.g. a mode command relating to a subsequent frame, shown in column 3 of Fig. 2). What is *denoted* by the bit sequence and the partitioned bit sequence is not specified in the claims currently on file. Thus, the Examiner's implicit suggestion that the fact that an actual coding mode and a future coding mode cannot be the same is not understood. In the specific embodiment shown in Fig. 2, the future

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coding mode 010 transmitted in frames 0 to 2 (column 3) comprises the same sequence of bits as the actual coding mode used in frames 3 to 5 (column 2). It is in this sense that the applicants consider that the future coding mode (partitioned and transmitted in other frames) and the actual coding mode (transmitted in a frame to which it relates) are the same.

      For the foregoing reasons, applicants submit that their claims are in condition for allowance. Favorable action is respectfully requested.

Respectfully submitted,

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